

What is claimed is:

Subpat
1. A ferromagnetic ZnO-type compound, wherein a ZnO-type compound contains at least one metal selected from a group of transition metallic elements consisting of V, Cr, Fe, Co, Ni, Rh and Ru.

2. The ferromagnetic ZnO-type compound of claim 1, wherein said ZnO-type compound contains at least two types of metals selected from a group consisting of said transition metallic elements, Ti, Mn and Cu.

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3. The ferromagnetic ZnO-type compound of claim 1, wherein said ZnO-type compound is doped at least either one of n-type dopant and p-type dopant.

4. A ferromagnetic ZnO-type compound, wherein a ZnO-type compound is added with at least one of

15 (1) at least one metallic element selected from a group consisting of transition metallic elements of V, Cr, Fe, Co, Ni, Rh or Ru,

(2) at least two metallic elements selected from a group consisting of said transition metallic elements, Ti, Mn and Cu, and

20 (3) at least one of said (1), (2), an n-type dopant, and a p-type dopant

such that a desired ferromagnetic transition temperature is achieved.

25 5. A ferromagnetic ZnO-type compound in which addition of any one of (1) to (3) of claim 4 is performed to exhibit desired light-filtering characteristics.

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6. A method for adjusting ferromagnetic characteristics of a ferrōmagnetic ZnO-type compound, wherein at least one of

(1) at least one metallic element selected from a group consisting of transition metallic elements of V, Cr, Fe, Co, Ni, Rh or Ru,

(2) at least two metallic elements selected from a group consisting of said transition metallic elements, Ti, Mn and Cu, and

(3) at least one of said (1), (2), an n-type dopant, and a p-type dopant

is added to said ZnO-type compound for adjusting ferromagnetic characteristics by adjusting densities of said transition metallic elements, Ti, Mn, Cu or n-type dopant or p-type dopant or by varying combinations of these metallic elements.

7. The adjusting method of claim 6, wherein the ferromagnetic transition temperature is adjusted to a desired temperature using at least one method by adjusting the density or by varying combinations of metallic elements as listed in said (2).

8. The adjusting method of claim 6, wherein the ferromagnetic state is stabilized by adjusting ferromagnetic energy by crystal-mixing at least two types of metallic elements as listed in said (2) and by decreasing the entire energy through kinetic energy by holes or electrons introduced by said metallic elements

themselves.

9. The adjusting method of claim 6, wherein the ferromagnetic state is stabilized by crystal-mixing at least two types of metallic elements as listed in said (2) and by controlling the size and sign of magnetic interaction between metallic atoms through holes or electrons introduced by said metallic elements themselves.

10. The adjusting method of claim 6, wherein a ferromagnetic ZnO-type compound with desired light-filtering characteristics is obtained by crystal-mixing at least two types of metallic elements as listed in said (2), by controlling the size and sign of magnetic interaction between metallic atoms through holes or electrons introduced by said metallic elements themselves and by controlling transmitting characteristics of light owing to crystal-mixing of said metallic elements.

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